

Y	N	N/A	94. Does the test person know when CISPR 22 can be used to show compliance with Part 15 and the conditions of its use?	
Y	N	N/A	95. For measurement of ISM equipment, is the test person knowledgeable of the intricacies and special procedures in MP-5 and the rules in 47 CFR Part 18?	
Y	N	N/A	96. Are coax cables, antennas, receiver or spectrum analyzer checked at the start of each test for proper operation?	
Y	N	N/A	97. Can the test person explain the FCC requirements for testing a product in 47 CFR 15.31-15.37? Is he/she knowledgeable of the FCC testing conditions for different types of products?	
Y	N	N/A	98. Can the test person describe at least three different types of examples of IT equipment to be tested? Can he/she demonstrate or explain how the equipment would be setup and tested? Can he/she adequately discuss the assumptions that went into the test setup?	
Y	N	N/A	99. For a laboratory providing <i>in-situ</i> testing service, can the test person satisfactorily describe how measurements would be performed at the user's location?	
Y	N	N/A	100. Have someone at each type of site, at the lab, replicate at least three frequency points on the horizontal site attenuation and at least three frequency points on the vertical site attenuation. Is the test performed correctly and is the site attenuation data at these frequencies consistent with the previously recorded data?  Suggestion: Pick frequencies from previous data that have both low and high deviations from the NSA.	

## **ON-SITE CHECKLIST FOR FCC PART 15 DEVICES**

Item No.	Comments or Non-Conformity

## ACCLASS APPLICATION FOR ISO/IEC 17025 ACCREDITATION

## PLEASE COMPLETE THIS APPLICATION ELECTRONICALLY

**Organization Name:**

(As to be officially listed on certificate and scope of accreditation. Separate application required for each accreditation location.)

**Accreditation Location:**

(As to be officially listed on certificate and scope of accreditation. Separate application required for each accreditation location.)

**Mailing Address:**

(If different from Accreditation location)

**Web Site Address:****Telephone:****Faximile:****Email:**

(Note: Please supply an email address that is checked on a daily basis. ACCLASS uses email to communicate when reports have been uploaded, invoicing, and changes to requirements.)

**Authorized Representative:**

Applying for Scope of:  Calibration  Testing  Calibration & Testing

Does your organization perform on-site (field) calibration(s)/test(s)?  Yes  No

Does your organization maintain multiple laboratory sites?  Yes  No

*(Note: If yes, please contact ACCLASS directly for further guidance and requirements regarding multi-site organizations.)*

Does your organization intend to meet the requirements of ANSI/NCSL Z-540?  Yes  No

Has the organization ever been accredited to ISO/IEC 17025?  Yes  No

*(Note: If previously or are currently accredited to 17025 please attach copies of certificate, scope, and previous reports issued by your accreditation body. The process cannot begin until these reports are received.)*

**Attach Draft Scope of Accreditation<sup>1</sup>:** (Guidance for preparation of the draft Scope for ISO/IEC 17025 Accreditation is provided on the following pages attached to this application.)

My organization has submitted payment for the non-refundable application fee. We understand that ACCLASS will invoice us for other accreditation activities when they are performed, and that all invoices are due net 30 days.

We understand that ACCLASS will use its best efforts to schedule accreditation services on dates which are agreeable to us and that once we agree to specific dates ACCLASS will confirm the dates in writing. We understand that if we cancel confirmed dates within thirty days prior to the first confirmed date, ACCLASS will charge us 50% of the daily fee for each canceled date. We further understand that there may be additional charges for review of corrective action(s) and/or a follow-up visit for any non-conformance.

We certify that we have read and agree to comply with the applicable requirement(s) and ACCLASS' Accreditation System, ACCLASS Document 3, including use of the ACCLASS symbol. We certify that we have read and agree to the Responsibilities and Obligations of the Customer, in Appendix A of this application. We agree to cooperate fully and supply all information and documentation needed before, during and after the accreditation process to ACCLASS. We further agree to allow the release of PT/ILC reports directly to ACCLASS from providers of such services.

I am authorized by my organization to apply to ACCLASS for accreditation. I am further authorized to agree that my organization will pay ACCLASS for any charges billed for services leading to accreditation rendered at the request of my organization.

**Authorized Representative Signature:****Date:** 10/09/2008

<sup>1</sup> Your draft scope of accreditation and budgets must be completed and submitted in order for ACCLASS to better serve you. Please be advised that failure to submit a draft scope of accreditation and uncertainty budgets prior to the assessment may result in your assessment being delayed.

**ACCLASS Preparation of Draft Scope of Accreditation for  
Testing Laboratories Only**

The following information must accompany the **Application for Accreditation** to assist in preparation of the Scope of Accreditation. Using the format on the following page, provide the following information:

1. Reference to the general field of testing covered under the scope (e.g. Biological, Chemical, Medical, Mechanical testing).
2. Identification of the group of products, materials or items tested.
3. Identification of the specific tests or types of tests performed.
4. Identification of the specification, standard (method), or technique used.
5. Other information as applicable such as: detection limit, range, type of equipment used, etc.
6. ACLASS requires scopes of accreditation to meet NIST SP 811 Guide for the Use of the International System of Units (SI), where available. This NIST 811 Guide has been prepared by the National Institute of Standards and Technology (NIST) to assist those who may have need of such assistance, in the use of the SI in their work, including the reporting of results of measurements. NIST SP 811 can be accessed on the ACLASS web site at <http://aclasscorp.com/guidancedocs.cfm>

The table found below will be used to develop the draft Scope of Accreditation for your laboratory. A list of suggested test areas follows the table. Please check all that apply to your laboratory.

## DRAFT SCOPE OF ACCREDITATION – TESTING

Please complete the following table **ELECTRONICALLY** in Microsoft Word to allow for future modifications. For examples of accredited laboratory scopes please visit [www.aclasscorp.com](http://www.aclasscorp.com) and click on "Accredited Laboratories."

<b>TYPE/CLASS OF TESTING</b>	<b>SPECIFIC TESTS OR PROPERTIES MEASURED</b>	<b>SPECIFICATION, STANDARD METHOD OR TECHNIQUES USED</b>	<b>*DETECTION LIMIT/ RANGE/ EQUIPMENT</b>
EMISSION STANDARDS AND TEST METHODS	RADIATED & CONDUCTED EMISSIONS	FCC Part 15 B/C/D/E using ANSI C63.4 2003) & ANSI C63.17; FCC Part 18 using FCC OST/MP-05 (1986); FCC Report and Order ET Docket 98-153 (FCC 02-48); Procedures IDB 20040420-001; Procedures in IDB 20021108-001 with FCC Method 47 CFR Part 15, Subpart F: DA 00-705 (March 30, 2000) and KDB Pub. No. 558074, KDB Pub. No. 200433; DA 02-2138; CISPR 22 (1997)+A1, (2000)+A2, (2002). CISPR 22 (2005); EN 55022 (1998)+A1, (2000)+A2, (2003), EN 55022 (2006); AS/NZS CISPR 22; CAN/CSA-CEI/IEC CISPR 22; CNS 13438; KN 22 with RRL Notice # 2007-100 (Dec 26, 2007); CISPR 11 (1997)+A1, (1999)+A2, (2002); EN 55011 (1998)+A1, (1999)+A2, (2002); AS/NZS CISPR 11; KN11 with RRL Notice 2007-100 (Dec 26, 2007); CNS 13803	
EMISSION STANDARDS AND TEST METHODS	HARMONICS	IEC 61000-3-2 (2000)+A1, (2001)+A2, (2004). IEC 61000-3-2 (2005); EN 61000-3-2 (2000)+A2, (2005). EN 61000-3-2 (2006); AS/NZS 61000-3-2	
EMISSION STANDARDS AND TEST METHODS	FLICKER	IEC 61000-3-3 (1994)+A1, (2001)+A2, (2005); EN 61000-3-3 (1995)+A1, (2001)+A2, (2005); AS/NZS 61000-3-3	
EMISSION STANDARDS AND TEST METHODS	GENERIC PRODUCT/ SPECIFIC EMISSIONS STANDARDS	IEC 61000-6-3; EN 61000-6-3; AS/NZS 61000.6.3; IEC 61000-6-4; EN 61000-6-4; AS/NZS 61000.6.4; CISPR 14-1 (2000)+A1, (2001)+A2, (2002). (excluding measurement of clicks); EN 55014-1 (2000)+A1, (2001)+A2, (2002). (excluding measurement of clicks); AS/NZS CISPR 14-1 (excluding measurement of clicks); CNS 13783-1 (2001)+A1, (excluding measurement of clicks); CISPR 25, sections 6.2, 6.3 and 6.4 only	
IMMUNITY STANDARD AND TEST METHODS	ESD	IEC 61000-4-2 (1995)+A1, (1997)+A2, (1998); EN 61000-4-2 (1995)+A1, (1999)+A2, (2001); KN 61000-4-2	

IMMUNITY STANDARD AND TEST METHODS	RF IMMUNITY UP to 2.7 GHz, 20V/m	IEC 61000-4-3 (2002)+A1, (2002); IEC 61000-4-3 (2006); EN 61000-4-3 (2002)+A1, (2003), EN 61000-4-3 (2006); KN 61000-4-3	
IMMUNITY STANDARD AND TEST METHODS	EFT	IEC 61000-4-4 (1995)+A1, (2000)+A2, (2001); IEC 61000-4-4 (2004); EN 61000-4-4 (1995)+A1, (2001)+A2, (2002); EN 61000-4-4 (2004); KN 61000-4-4	
IMMUNITY STANDARD AND TEST METHODS	SURGE	IEC 61000-4-5 (1995)+A1, (2000), IEC 61000-4-5 (2005); EN 61000-4-5 (1995)+A1, (2001), EN 61000-4-5 (2006); KN 61000-4-5	
IMMUNITY STANDARD AND TEST METHODS	CONDUCTED IMMUNITY	IEC 61000-4-6 (1996)+A1, (2001); IEC 61000-4-6 (2003)+A1, (2004)+A2, (2006); EN 61000-4-6 (1996)+A1, (2001); EN 61000-4-6 (2007), KN 61000-4-6	
IMMUNITY STANDARD AND TEST METHODS	LOW FREQUENCY MAGNETIC	IEC 61000-4-8 (1993)+A1, (2000); EN 61000-4-8 (1994)+A1, (2001); KN 61000-4-8	
IMMUNITY STANDARD AND TEST METHODS	PULSE MAGNETIC	IEC 61000-4-9 (1993)+A1, (2000); EN 61000-4-9 (1993)+A1, (2001)	
IMMUNITY STANDARD AND TEST METHODS	DAMED OSCILLATOR MAGNETIC	IEC 61000-4-10 (1993)+A1, (2000); EN 61000-4-10 (1993)+A1, (2001)	
IMMUNITY STANDARD AND TEST METHODS	POWER DROP	IEC 61000-4-11 (1994)+A1, (2000), IEC 61000-4-11 (2004); EN 61000-4-11 (1994)+A1, (2002), EN 61000-4-11 (2004); KN 61000-4-11	
IMMUNITY STANDARD AND TEST METHODS	RING WAVES IMMUNITY	IEC 61000-4-12 (1995)+A1, (2000), IEC 61000-4-12 (2006); EN 61000-4-12 (1995)+A1, (2001), EN 61000-4-12 (2006)	
IMMUNITY STANDARD AND TEST METHODS	GENERIC PRODUCT/ SPECIFIC IMMUNITY STANDARDS	CISPR 24 (1997)+A1, (2001)+A2, (2002); EN55024 (1998)+A1, (2001)+A2, (2003); KN 24 with RRL Notice No 2007-101, (Dec 26, 2007); AS/NZS CISPR 24:2002; EN 61000-6-1; EN 61000-6-2; AS/NZS 4254.1; EN 55103-2; EN 50130-4	
<b>COMBINEDMISSIO NS GENERIC/PRODUCT SPECIFIC STANDARDS</b>		IEC 60601-1-2; EN 60601-1-2; IEC 61326; EN 61326	
RADIO TESTS	EUROPE	ETSI EN 300 086-2; ETSI EN 300 197; ETSI EN 300 219-1; ETSI EN 300 220-3; ETSI EN 300 328-2; ETSI EN 300 330-2; ETSI EN 300 390-2; ETSI EN 300 440-2; ETSI EN 300 683; ETSI EN 301 489-1; ETSI EN 301 489-3; ETSI EN 301 489-4; ETSI EN 301 489-5; ETSI EN 301 489-7; ETSI EN 301 489-8; ETSI EN 301 489-12; ETSI EN 301 489-15; ETSI EN 301 489-17; ETSI EN 300 826	

RADIO TESTS	USA	TIA/EIA 603-C using 47 CFR Parts 2, 22 (cellular and noncellular), 24, 25, 26, 27, 74, 80, 87, 90, 95, 97 and 101	
RADIO TESTS	CANADA	RSS-Gen; RSS-102 (excluding SAR); RSS-117; RSS-118; RSS-119; RSS-123; RSS-125; RSS-128; RSS-129; RSS-130; RSS 130, Annex 1, Issue 2; RSS 130 Attachment I; RSS-131; RSS-132; RSS-133; RSS-134; RSS-135; RSS-136; RSS-137; RSS-139; RSS-141; RSS-142; RSS-170; RSS-181; RSS-182; RSS 187; RSS-188; RSS-191; RSS-192; RSS-193; RSS-195; RSS-210; RSS 212; RSS-213; RSS-215; RSS-243; RSS-287; RSS-310	
MILITARY EMC STANDARDS & TEST METHODS	CONDUCTED EMISSIONS	MIL-STD-461E: Methods CE101, CE102, CE106; MIL-STD-462D: Methods CE101, CE102, CE106; MIL-STD-462C: Methods CE01, CE02, CE03, CE06	
MILITARY EMC STANDARDS & TEST METHODS	RADIATED EMISSIONS	MIL-STD-461E: Methods RE101, RE102 and RE103; MIL-STD-462D: Methods RE101, RE102 and RE 103; MIL-STD-462C: Methods RE01, RE02 and RE03	
MILITARY EMC STANDARDS & TEST METHODS	CONDUCTED SUSCEPTIBILITY	MIL-STD-461E: Methods CS101, CS 103; CS 104; CS 105, CS109, CS114, CS115, CS116; MIL-STD-462D: Methods CS101, CS103, CS114, CS115, CS116; MIL-STD-462: Methods. CS01, CS02, CS03, CS04, CS05, CS06, CS08	
MILITARY EMC STANDARDS & TEST METHODS	RADIATED SUSCEPTIBILITY	MIL-STD-461E: Methods RS101, RS103; MIL-STD-461/462D: Methods RS101, RS103	
AIRBORNE EQUIPMENT	MAGNETIC EFFECTS	RTCA DO-160E: Section 15	
AIRBORNE EQUIPMENT	POWER INPUT	RTCA DO-160E: Section 16	
AIRBORNE EQUIPMENT	VOLTAGE SPIKES	RTCA DO-160E: Section 17	
AIRBORNE EQUIPMENT	AUDIO FREQUENCY CONDUCTED SUSCEPTIBILITY	RTCA DO-160E: Section 18	
AIRBORNE EQUIPMENT	INDUCED SIGNAL SUSCEPTIBILITY	RTCA DO-160E: Section 20.4	
AIRBORNE EQUIPMENT	RADIATED SUSCEPTIBILITY	RTCA DO-160E: Section 20.5	

AIRBORNE EQUIPMENT	LIGHTING INDUCED TRANSIENT SUSCEPTIBILITY	RTCA DO-160E: Section 22	
AIRBORNE EQUIPMENT	ESD	RTCA DO-160E: Section 25	
PRODUCT SAFETY**	ITE	IEC 60950 (2001); IEC 60950-1 (2005); EN 60950 (2000); EN 60950-1 (2006); AS/NZS 60950-1 (2003); ANSI/UL 60950-1 (2007); CAN/CSA C22.2 60950-1 (2007)	
PRODUCT SAFETY**	MEASUREMENT CONTROL & LAB USE	IEC 61010-1 (2001); EN 61010-1 (2001); UL 61010-1 (2004); CAN/CSA C22.2 61010-1 (2004)	
PRODUCT SAFETY**	MEDICAL EQUIPMENT	IEC 60601-1 (1988); IEC 60601-1-2; EN 60601-1 (1990); EN 60601-1-2; UL 60601-1 (2003)	
PRODUCT SAFETY**	MACHINERY	IEC 60204-1 (1997); EN 60204-1 (1997)	
PRODUCT SAFETY**	TRANSMITTERS	EN 60215 (1989)	
ENVIRONMENTAL	HIGH TEMPERATURE	MIL-STD-810, Method 501.4	
ENVIRONMENTAL	LOW TEMPERATURE	MIL-STD-810, Method 502.4	
ENVIRONMENTAL	HUMIDITY	MIL-STD-810, Method 507.4	
ENVIRONMENTAL	IMMERSION	MIL-STD-810, Method 512.4	

\*AS APPLICABLE

\*\* Exclusion : UV exposure and  
resistance to UV exposure, ionizing  
radiation.

### Testing Areas and Parameters

**Instructions:** The following are examples of parameters within each testing area. Check those testing parameters for which your laboratory is seeking accreditation. If you do not see your parameter, check "other" and specify in the space provided. This document is used in conjunction with the draft scope of accreditation above. To electronically check boxes, double click on box with your mouse button.

- Acoustics & Vibration
- Biological / Microbiological:
  - Pharmaceutical / Nutraceutical
  - Biotechnology / Biochemical
- Chemical:
  - Animal Drug Testing       Paint
  - Fasteners                   Fertilizers
  - Metals                     Solvents
  - Inorganics / Organics       Coal
  - Other (specify): \_\_\_\_\_
- Construction Materials
- Dimensional Inspection / Measurement
- Electrical (EMC)
- Environmental:
  - Air                             Asbestos
  - Environmental Lead       Water
  - Bioassay                     Radon
  - Underground Storage        Solid/Hazardous Wastes
  - Other (specify): \_\_\_\_\_
- Mechanical
  - Fasteners & Metals       Paint
  - Plastics                     Rubber
  - Windows & Doors         Paper
  - Other (specify): \_\_\_\_\_
- Non-Destructive
- Optical/Photometric/Radiometric:
  - Ionizing Radiation
- Thermal
- Other (specify): \_\_\_\_\_
- Multi-disciplinary
  - Information Technology
  - Medical/Veterinary
  - Forensic
  - Occupational
  - Health/Igiene
  - Food/Beverage

## Appendix A

### Responsibilities and Obligations of the Customer

By signing the application, the customer hereby requests ACLASS to perform ISO/IEC 17025 accreditation activities pursuant to the application submitted to ACLASS by customer ("Accreditation Activities"). ACLASS shall perform the Accreditation Activities in accordance with ACLASS' then current Accreditation System. ACLASS shall make available to the customer at the customer's request, the documents comprising ACLASS' ISO/IEC 17025 Accreditation System.

ACCLASS shall determine in its sole discretion whether the customer meets ACLASS' requirements for accreditation to the applicable requirement(s) as set forth in ACLASS' ISO/IEC 17025 Accreditation System ("Accreditation Criteria"). In the event ACLASS determines that the customer meets the Accreditation Criteria, ACLASS shall deliver to the customer ACLASS' Certificate and Scope of Accreditation which shall include a copy of ACLASS' symbol. The Certificate and Scope of Accreditation shall be deemed to be the evidence of the customer's status as being accredited pursuant to ACLASS' Accreditation Criteria.

ACCLASS shall have the right to carry out surveillance and reassessment pursuant to ACLASS' ISO/IEC 17025 Accreditation System to verify the customer's continuous compliance to the Accreditation Criteria.

The customer shall conform to the following:

- a. Maintain impartiality and integrity for all services provided under their scope of accreditation;
- b. Commit to meet the requirements of ACLASS' Accreditation Criteria including adapting to changes in the requirements for accreditation;
- c. Take such actions as necessary to allow ACLASS to perform the Accreditation Activities, including provide for the examination of documentation and the assessment of all areas, records and personnel for the purposes of assessment, surveillance, reassessment, resolution of complaints and access to relevant documents that provide insight into the level of independence and impartiality from any related body;
- d. Record and address complaints, report complaints to ACLASS and otherwise continuously comply with all relevant provisions of the Accreditation Criteria and claim accreditation only in respect of requirements and scope for which customer has been granted accreditation (ACCLASS certificate and scope of accreditation does not cover subcontracted calibrations);
- e. Notify ACLASS within 30 days of changes to customer's laboratory management system or changes significantly affecting customer (such as a change of ownership, change of location, change in key personnel, including top management, main policies, resources, or change in equipment or if analysis of a complaint or other information indicates that customer no longer complies with the Accreditation Criteria) ("Change").
- f. Allow ACLASS to conduct surveillance and/or reassessment of customer in the event of a Change;
- g. Not expose assessors or others representing ACLASS to unsafe working conditions or environments, and to provide all assessors and others appropriate protective equipment;
- h. Arrange witnessing of services performed at the request of ACLASS including allowing third parties selected by ACLASS to witness ACLASS' assessments.
- i. Do not use its accreditation in a manner that may bring ACLASS into disrepute.
- j. Pay ACLASS for the Accreditation Activities as set in ACLASS' procedures.

The ACCLASS Logo is a registered trademark solely owned by ACCLASS. So long as the customer maintains its status as being accredited by ACCLASS pursuant to ACCLASS' Accreditation Criteria, the customer shall have the non-exclusive and non-transferable right to use the Certificate and Scope of Accreditation and the ACCLASS Symbol (except as provided for directly in the paragraph below) in customer's advertising, and marketing materials and campaigns, certificates and reports. In no event shall the customer use the Certificate and Scope of Accreditation and the ACCLASS Symbol (or a confusingly similar certificate and scope of accreditation or symbol) in a misleading or unauthorized manner, including, but not limited to, representing that the Certificate and Scope of Accreditation and the ACCLASS Symbol exemplifies a product, service or performance conformity certification; using the Certificate and Scope of Accreditation or the ACCLASS Symbol in connection with requirements or activities not approved by ACCLASS; or otherwise acting to bring ACCLASS or the ACCLASS Symbol in disrepute.

If ACCLASS expresses any concern with respect to the use of the Certificate and Scope of Accreditation or the ACCLASS Symbol as being inconsistent with or impermissible under this Application or ACCLASS' ISO/IEC 17025 Accreditation System, ("Improper Use"), ACCLASS may request the customer to cease and desist the Improper Use, and it shall be deemed to be a condition to the customer's continued accreditation that such Improper Use is immediately discontinued. In addition, in the event of such Improper Use or in the event ACCLASS determines that the customer is not complying with any obligation of the customer under this Agreement or the Accreditation System, ACCLASS shall have the right upon written notice to the customer to (a) suspend its Accreditation Activities until the customer complies with its obligation, (b) determine that the customer is no longer entitled to identify itself as accredited by ACCLASS and to require customer (temporarily or permanently) to cease using in any manner the Certificate and Scope of Accreditation (and to return such Certificate and Scope of Accreditation), the ACCLASS Symbol and/or Accreditation Mark, (c) refuse to issue a Certificate and Scope of Accreditation to the customer, (d) require a corrective action, (e) publish customer's transgression or (f) take other legal action. In the event ACCLASS takes any of the foregoing actions, ACCLASS shall not be required to reimburse any amounts to the customer.

ACCLASS and its assessor shall perform the Accreditation Activities in a workmanlike manner consistent with ACCLASS' then current Accreditation System. The warranty set forth in this section is the sole and exclusive warranty of ACCLASS under this application and the services contemplated to be provided herein and no other express or implied warranties exist, including but not limited to any warranty of merchantability and any warranty of fitness for a particular purpose. Customer acknowledges that ACCLASS does not warrant and has no liability or responsibility for (and such liability and responsibility belongs solely to customer) the laboratory and safety of any product or service produced, manufactured, delivered, sold or otherwise distributed by customer.

ACCLASS and the customer are independent parties and nothing set forth in this Application creates a joint venture, partnership or other concerted activity.

If, in ACCLASS' sole discretion, an assignment and/or activity by the customer effects a Change to customer's management system under this Application and/or changes made by ACCLASS to the Accreditation Criteria, customer shall cooperate and take the actions necessary to allow the assignment to occur based on a reassessment and/or surveillance visit or such other activity as ACCLASS reasonably deems necessary.

These Responsibilities and Obligations of the Customer shall be governed by, and construed and enforced in accordance with, the laws of the State of Wisconsin. Any dispute under this Application shall be resolved pursuant to the appeals procedure adopted by ACCLASS from time to time. In the event the customer makes any claim that a dispute is not subject to the appeals process or has not been adjudicated pursuant to the rules provided therein, the customer shall not have the right to bring any action with respect thereto before a court of law or equity, but shall only have the right to seek a determination from one arbitrator pursuant to the rules of the American Arbitration Association as to whether such dispute was subject to the appeals process or was adjudicated pursuant to the rules provided therein. Such arbitration shall be conducted in the State of Wisconsin, and each party shall bear its own expense for such arbitration.



**CLASS** Accreditation Services  
an ANSI-ISO National Accreditation Board company

### SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

### STANDARDS INSTITUTION OF ISRAEL - ELECTRONICS AND TELEMATICS LABORATORY

Chaim Levanon 42, Tel Aviv, 69977 ISRAEL  
Ilan Carmit Phone: 972-3 646 7800

#### TESTING

Valid to: December 15, 2010 Certificate Number: AT - 1359

##### I. Electrical

FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*DETECTION LIMIT/ RANGE/ EQUIPMENT
EMC - Emissions	General	Conducted	47 CFR, FCC Parts 15.A, 15.B, 15.C, using ANSI C63.4-2003; 47 CFR, FCC Part 18; AS/NZS 2064; AS/NZS 3548; IEC/CISPR 11; EN 55011; AS/NZS CISPR 11; AS/NZS CISPR 22; IEC/CISPR 14-1; EN 55014-1; AS/NZS CISPR 14-1; IEC/CISPR 22; EN 55022; IS 961-6.1; EN 50083-2	EMI Receiver LISN, T- ISN, Voltage probe
-- Emissions	General	Current Harmonics	IEC and EN 61000-3-2	Power Analyzer
-- Emissions	General	Voltage Fluctuations and Flicker	IEC and EN 61000-3-3	Power Analyzer
-- Emissions	General	Radiated Emissions	47 CFR, FCC Parts 15.A, 15.B, 15.C, using ANSI C63.4-2003; 47 CFR, FCC Part 18; AS/NZS 2064; AS/NZS 3548; IEC/CISPR 11; EN 55011; AS/NZS CISPR 11; AS/NZS CISPR 22; IEC/CISPR 14-1; EN 55014-1; AS/NZS CISPR 14-1; IEC/CISPR 22; EN 55022; IS 961-6.1; EN 50083-2	47 CFR Part 15 up to 18 GHz EMI Receiver, EMI Analyzer, Antenna
EMC - Immunity	General	Electrostatic Discharge (ESD)	IEC and EN 61000-4-2	ESD Simulator
--Immunity	General	Radiated Immunity	ENV 50204; IEC and EN 61000-4-3	Signal Generator, Antenna, RF Power Amplifier
--Immunity	General	Electrical Fast Transients/Burst	IEC and EN 61000-4-4	EFT test set



FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*DETECTION LIMIT/ RANGE/ EQUIPMENT
-Immunity	General	Surge Immunity	IEC and EN 61000-4-5 IS 961-6.2; ITU-T K.17; ITU-T K.20; ITU-T K.21	Surge test set
-Immunity	General	Conducted Immunity	IEC and EN 61000-4-6	Signal generator, RF Power Amplifier, CDN
--Immunity	General	Power Frequency Magnetic Field	IEC and EN 61000-4-8	Field Generator
--Immunity	General	Voltage Dips and Interruptions	IEC and EN 61000-4-11	PQF test set
Radio & EMC	Wireless communication	Radio, Emission & Immunity	EN 300 220; EN 300 328; EN 300 330; EN 300 440:2001, 2004; EN 301 489-X; FCC Part 15	EMI Analyzer, Antenna
EMC	ITE/Telecom	Emission & Immunity	IEC/CISPR 24; EN 55024; EN300 386	See above
EMC	Household appliances	Immunity	IEC/CISPR 14-2; EN55014-2;	See above
EMC	Electrical tools	Emission	IEC/CISPR 14-1; EN55014-1; EN55014	See above
EMC	Measurement Control & Laboratory	Emission & Immunity	IEC 61326; EN 61326	See above
EMC	Medical Devices	Emission & Immunity	IEC and EN 60601-1-2 and 60601-2-X	See above
EMC	Lifts, escalators and moving walks	Emission & Immunity	EN 12015; EN 12016	See above
EMC	Alarm systems	Emission & Immunity	EN 50130	See above
EMC	Audio, video, audiovisual and entertainment; lighting control apparatus for professional use	Emission & Immunity	EN 55103-1 and -2	See above



FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*DETECTION LIMIT/ RANGE/ EQUIPMENT
EMC	Residential, Commercial and Light Industrial	Emission	IEC and EN 61000-6-3 and 61000-6-4	See above
EMC	Industrial	Immunity	IEC and EN 61000-6-1 and 61000-6-2	See above
EMC	Signaling on low-voltage electrical installation	Emission & Immunity	EN50065	See above
EMC	Railway applications	Emission & Immunity	EN 50121-1.2.3.4.5; IEC 62236	See above
Telecom	Telecom_(Excluding HAC and Volume Control)	Telecom	47 CFR, FCC Part 68; ANSI/TIA-968-A; TBR21; TS001	Telecom test set
Product Safety	Medical Electrical Equipment	Electrical tests	IEC 60601-1, EN 60601-1, UL 60601-1; CAN/CSA-C22.2 No.601.1; IS 1011; IS 60601 Part 1; IEC and EN 60601-1-X, -XX IEC and EN 60601-2-X, -XX, IEC and EN 80601-2-X, -XX, IS 60601-1-X, -XX IS 60601-2-X, -XX IS 80601-2-X, -XX IEC/TR 62354; ISO 14971	Power Analyzer, Touch Current Tester, True RMS Multimeter, Scopemeter, AC/DC Withstand Voltage Tester, Ground Bond Tester
		Mechanical tests		Mechanical Probes
		Heating tests		Data Acquisition Unit with Thermocouples
		Environmental simulation		Temperature/Humidity Cabinet
Product Safety	Laser Equipment	Radiant power and energy	IEC and EN 60825-X , -XX IS 60825 Part 1; AS/NZS 2211.1; ANSI Z136.1	Power Meter Energy Meter
		Duration of the pulse		Photo detector, Oscilloscope
		Relative spectral measurements		Spectrophotometer
Product Safety	General	Human exposure to radiation emitted by equipment	EN12198-1; EN12198-2; EN12198-3; EN50366, EN 50364, EN 50371, EN 62311, IEC 62233	Spectrophotometer Field Probe



FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*DETECTION LIMIT/ RANGE/ EQUIPMENT
Product Safety	ITE/Telecom	Electrical tests	IEC and EN 60950; IEC and EN 60950-1; UL 60950-1; CSA/C22.2-225; CAN/CSA-C22.2 No. 60950-1-03; AS/NZS 60950.1; AS/NZS 4117; IS 60950 Part 1; IEC 60950-21; IEC 60950-22; IEC 60950-23; EN 60950-21; EN 60950-22, EN 60950-23; UL 60950-21; UL 60950-22; UL 60950-23; EN 41003	Power Analyzer, Touch Current Tester, True RMS Multimeter, Scopemeter, AC/DC Withstand Voltage Tester, Ground Bond Tester
		Mechanical tests		Mechanical Probes
		Heating tests		Data Acquisition Unit with Thermocouples
		Environmental simulation		Temp/Humidity Cabinet
Product Safety	Measuring, Control and Laboratory Equipment	Electrical tests	IEC and EN 61010-1, 61010-2-X, 61010-031; UL 61010A-1, UL 61010A-2-X; UL 61010B-1; UL 61010C-1; UL 61010-1; IS 61010 Part 1; AS 61010.1; AS 61010.2.XXX	Power Analyzer, Touch Current Tester, True RMS Multimeter, Scopemeter, AC/DC Withstand Voltage Tester, Ground Bond Tester
		Mechanical tests		Mechanical Probes
		Heating tests		Data Acquisition Unit with Thermocouples
		Environmental simulation		Temp/Humidity Cabinet
Product Safety	Household Equipment	Electrical tests	IEC and EN 60335-1, 60335-2-X; IS 900; AS/NZS 60335.1; AS/NZS 60335.X.XXX; UL 60335-1; UL 60335-2-X; UL867; UL 1081; AS/NZS 3136;	Power Analyzer, Touch Current Tester, True RMS Multimeter, Scopemeter, AC/DC Withstand Voltage Tester, Ground Bond Tester
		Mechanical tests		Mechanical Probes
		Heating tests		Data Acquisition Unit with Thermocouples
		Environmental simulation		Temp/Humidity Cabinet
Product Safety	Audio, Video Equipment	Electrical tests	IEC 60065; EN 60065; UL 60065; UL 6500; IS 250; AS/NZS 60065	Power Analyzer, Touch Current Tester, True RMS Multimeter, Scopemeter, AC/DC Withstand Voltage Tester, Ground Bond Tester
		Mechanical tests		Mechanical Probes
		Heating tests		Data Acquisition Unit with Thermocouples
		Environmental simulation		Temp/Humidity Cabinet



FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*DETECTION LIMIT/ RANGE/ EQUIPMENT
Product Safety	Low-voltage switchgear and controlgear	Electrical tests Mechanical tests Heating tests Environmental simulation	IEC and EN 60439-1; IEC and EN 60439-X; EN 50178	Power Analyzer, Touch Current Tester, True RMS Multimeter, Scopemeter, AC/DC Withstand Voltage Tester, Ground Bond Tester Mechanical Probes Data Acquisition Unit with Thermocouples Temperature/Humidity Cabinet



FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*DETECTION LIMIT/ RANGE/ EQUIPMENT
Product Safety	Machinery	Electrical tests	IEC and EN 60204-1; EN ISO 12100-1; EN ISO 12100-2; EN 349; EN 547-1; EN 547-2; EN 547-3; EN 574; EN 614-1; EN 614-2; EN 842; EN 894-1; EN 894-2; EN 894-3; EN 953; EN 981; EN 982; EN 983; EN 999; EN 1010-1; EN 1010-2; EN 1010-3; EN 1010-4; EN 1010-5; EN 1037; EN 1088; EN 1837; EN ISO 7250; EN ISO 7731; EN ISO 10218; EN ISO 13732-1; EN ISO 13849-1; EN ISO 13857; EN ISO 14121-1; EN 61310-1; EN 61310-2; EN 61310-3; IEC 61508-SER; IEC 61508-0; IEC 61508-1; IEC 61508-2; IEC 61508-3; IEC 61508-4; IEC 61508-5; IEC 61508-6; IEC 61508-7; UL 775	Power Analyzer, Touch Current Tester, True RMS Multimeter, Scopemeter, AC/DC Withstand Voltage Tester, Ground Bond Tester
		Mechanical tests		Mechanical Probes
		Heating tests		Data Acquisition Unit with Thermocouples
		Environmental simulation		Temperature/Humidity Cabinet
Product Safety	Motors	Electrical tests	IEC and EN 60034-X	Power Analyzer, Touch Current Tester, True RMS Multimeter, Scopemeter, AC/DC Withstand Voltage Tester, Ground Bond Tester
		Mechanical tests		Mechanical Probes
		Heating tests		Data Acquisition Unit with Thermocouples
		Environmental simulation		Temperature/Humidity Cabinet
Product Safety	Electrical/electronic equipment	IP tests	IEC and EN 60529	Mechanical probes, Drip Box, Oscillating Tube, Spray Nozzle, Haze Nozzle, Dust Chamber



FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*DETECTION LIMIT/ RANGE/ EQUIPMENT
Product Safety	Equipment for semiconductor industry	Electrical tests Mechanical tests Heating tests Environmental simulation	SEMI S2; SEMI S8; SEMI S9; SEMI S10; SEMI S14; SEMI S22; SEMI F47; SEMI F42; SEMI S17; SEMI E10; SEMI S3; SEMI S23	Power Analyzer. Touch Current Tester. True RMS Multimeter. Scopemeter, AC/DC Withstand Voltage Tester, Ground Bond Tester Mechanical Probes Data Acquisition Unit with Thermocouples Temperature/Humidity Cabinet



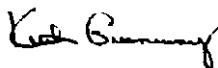
FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*DETECTION LIMIT/ RANGE/ EQUIPMENT
Product Safety	Industrial control equipment	Electrical tests	UL 508; UL508A; UL 508C	Power Analyzer, Touch Current Tester, True RMS Multimeter, Scopemeter, AC/DC Withstand Voltage Tester, Ground Bond Tester
		Mechanical tests		Mechanical Probes
		Heating tests		Data Acquisition Unit with Thermocouples
		Environmental simulation		Temperature/Humidity Cabinet
Product Safety	Automatic electrical controls for household and similar use	Electrical tests	IEC and EN 60730-1; IEC and EN 60730-2-X; UL 60730-1A; UL 60730-2-X; UL244A	Power Analyzer, Touch Current Tester, True RMS Multimeter, Scopemeter, AC/DC Withstand Voltage Tester, Ground Bond Tester
		Mechanical tests		Mechanical Probes
		Heating tests		Data Acquisition Unit with Thermocouples
		Environmental simulation		Temperature/Humidity Cabinet
Product Safety	Lamp control	Electrical tests	IEC and EN 61347-1; IEC and EN 61347-2-X; AS/NZS 61347.1; AS/NZS 61347.2.X; UL1472; UL 935	Power Analyzer, Touch Current Tester, True RMS Multimeter, Scopemeter, AC/DC Withstand Voltage Tester, Ground Bond Tester
		Mechanical tests		Mechanical Probes
		Heating tests		Data Acquisition Unit with Thermocouples
		Environmental simulation		Temperature/Humidity Cabinet



FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*DETECTION LIMIT/ RANGE/ EQUIPMENT
Product Safety	UPS and power units	Electrical tests	UL 1778; EN 50091-1; IEC and EN 62040-1-1, 62040-1-2; UL 963; UL 1012	Power Analyzer, Touch Current Tester, True RMS Multimeter, Scopemeter, AC/DC Withstand Voltage Tester, Ground Bond Tester
		Mechanical tests		Mechanical Probes
		Heating tests		Data Acquisition Unit with Thermocouples
		Environmental simulation		Temperature/Humidity Cabinet
Product Safety	Telecom	Overvoltage only	ITU-T K.17; ITU-T K.20; ITU-T K.21	Overvoltage tester
Product Safety	Alarm systems	Electrical tests	EN 50131-1; EN 50131-X-X; EN 50130-5; UL 365; UL603; UL609; UL 1023; UL 1076; UL 1610; UL 636; UL 1635; UL 639; UL 1037	Power Analyzer, Touch Current Tester, True RMS Multimeter, Scopemeter, AC/DC Withstand Voltage Tester, Ground Bond Tester
		Mechanical tests		Mechanical Probes
		Heating tests		Data Acquisition Unit with Thermocouples
		Environmental simulation		Temperature/Humidity Cabinet

*Notes:*

1. \* = As Applicable
2. This scope is part of and must be included with the Certificate of Accreditation No. AT-1359



Vice President





**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005**

**Philips Medical Systems-Andover Hardware Test Center**

3000 Minuteman Road, Andover, MA 01810  
Eric V. Anderson / Stan Mikutel Phone: 978-659-2084/2308

**TESTING**

Valid to: January 28, 2011

Certificate Number: AT - 1369

**I. Electrical – (EMC) electromagnetic compatibility**

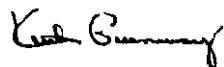
ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*DETECTION LIMIT/ RANGE/EQUIPMENT
Cardiography, Interventional X-Ray, Connected Care, Magnetic Resonance, Mammography, Nuclear Medicine, Patient Monitoring, Radiography, Remote Cardiac, Respiratory Equipment, Resuscitation, Telehealth, and Ultrasound Supplies	Emission	EN 55011, CISPR 11 EN 55022, CISPR 22 EN 61000-3-2, IEC 61000-3-2 EN 61000-3-3, IEC 61000-3-3 EN 61000-6-3, IEC/CISPR 61000-6-3 EN 61000-6-4, IEC 61000-6-4	Per Test Standards
	Immunity	EN 55024, CISPR 24 EN 61000-4-2, IEC 61000-4-2 EN 61000-4-3, IEC 61000-4-3 EN 61000-4-4, IEC 61000-4-4 EN 61000-4-5, IEC 61000-4-5 EN 61000-4-6, IEC 61000-4-6 EN 61000-4-8, IEC 61000-4-8 EN 61000-4-11, IEC 61000-4-11 EN 61000-6-1, IEC 61000-6-1 EN 61000-6-2, IEC 61000-6-2	Per Test Standards
Cardiography, Interventional X-Ray, Connected Care, Magnetic Resonance, Mammography, Nuclear Medicine, Patient Monitoring, Radiography, Remote Cardiac, Respiratory Equipment, Resuscitation, Telehealth, and Ultrasound Supplies	Emission and Immunity	EN 21647, ISO 21647 EN 300 220, ETS 300 220 EN 300 328-1, ETS 300 328 EN 301 489, ETS 301 489 EN 55014-1, CISPR 14-1 EN 55014-2, CISPR 14-2 EN 60601-1-2, IEC 60601-1-2 EN 60601-2-4, IEC 60601-2-4 EN 60601-2-23, IEC 60601-2-23 EN 60601-2-25, IEC 60601-2-25 EN 60601-2-26, IEC 60601-2-26 EN 60601-2-27, IEC 60601-2-27	Per Test Standards



ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*DETECTION LIMIT/ RANGE/ EQUIPMENT
Cardiography, Interventional X-Ray, Connected Care, Magnetic Resonance, Mammography, Nuclear Medicine, Patient Monitoring, Radiography, Remote Cardiac, Respiratory Equipment, Resuscitation, Telehealth, and Ultrasound Supplies (cont.)	Emission and Immunity	EN 60601-2-30, IEC 60601-2-30 EN 60601-2-34, IEC 60601-2-34 EN 60601-2-37, IEC 60601-2-37 EN 60601-2-47, IEC 60601-2-47 EN 60601-2-49, IEC 60601-2-49 EN 864 BS 5724-2.30 EN 865 BS 5724-2.201 EN 9919, ISO 9919	Per Test Standards

*Notes:*

1. \* = As Applicable
2. This scope is part of and must be included with the Certificate of Accreditation No. AT-1369



Vice President



## **Technical Expert**

### **PROFILE**

Product compliance, standards and regulatory expertise with specialization in:

- ◆ Electromagnetic Compatibility and RF Testing
- ◆ Standards development and regulatory management,
- ◆ Development of engineering standards supporting regulatory requirements,
- ◆ Government and Industry Relations,
- ◆ Voting equipment testing and certification,
- ◆ Advanced technology business planning.
- ◆ Product development and design.

28 years of product development and technology planning experience:

- ◆ President of the International Association of Radio and Telecommunications Engineers (iNARTE).
- ◆ Chair of the IEEE EMC Society Standards Development Committee.
- ◆ US Election Assistance Commission, Technical Reviewer.
- ◆ Voting Equipment Examiner, States of Texas and North Carolina.
- ◆ Member of 3 US federal advisory committees.
- ◆ Testifying witness, US Department of Justice.
- ◆ Distinguished Guest Lecturer, Cyber Security Center, Our Lady of the Lake University.
- ◆ Former member of the IEEE Standard Board.

### **SELECTED ACCOMPLISHMENTS**

#### **EMC AND ENVIRONMENTAL TESTING AND REGULATORY COMPLIANCE**

- Chairman ANSI C63.4-2003 revision committee, Test method adopted by the FCC for unintentional radiators.
- Improved test department efficiency by 500%, with no increase in personnel.
- Invented the EHR GTEM, patented, gained FCC approval and implemented its use.
- Member of key standards committees for EMC, RF Health, Accessibility and related areas.

#### **SPECTRUM MANAGEMENT & SOFTWARE DEFINED RADIO**

- President of the International Association of Radio and Telecommunications Engineers (iNARTE).
- Founder and chairman of the IEEE SCC41, Dynamic Spectrum Access Networks, and IEEE 1900.2, interference analysis standard.
- Chairman ANSI C63.17, Test Methodology adopted by FCC for UPCS band, Part 15D.

#### **VOTING EQUIPMENT**

- Technical Reviewer for US Election Assistance Commission.
- State Voting Equipment Examiner for the states of Texas and North Carolina.

- Inaugural member of US Election Assistance Commission Technical Guidelines Development Committee.
- Former ex officio of National Association of State Election Directors Technical Committee

## DISABILITY ACCESS

- Member of 2 US Access Board Federal Advisory Committee:
- Chairman ANSI C63.19 committee, Hearing Aid Compatibility with Mobile Phones, adopted by the FCC as a mandatory standard.
- Invited presenter on disability access at EU Ministerial Conference, April 2000 in Lisbon, Portugal

## PUBLICATIONS

Numerous professional papers and articles

(List of publications available upon request or online at [www.temconsulting.com](http://www.temconsulting.com))

## PATENTS

### Patents granted or pending

- 6,882,640: System and method for utilizing circuit switched and packet switched resources
- 6,744,750: Replicating and Recombinant Networking Systems and Methods for Wireless Networks
- 6,684,063: Integrated Hearing Aid for Telecommunications Devices
- 6,380,896: Circular polarization antenna for wireless communication system
- 6,225,917: Electromagnetic Field Probe Having a Non-Electrical Transmission Modality
- 5,754,054: Apparatus and Method for Determining the Source and Strength of EM Emissions
- 5,589,773: System and Method for Making Electromagnetic Measurements Using a Tiltable Transverse Electromagnetic Cell and a Fixed Tilt Sample Holder
- EP00805562A3: Radio-Frequency Hearing Aid Protector for Wireless Communications Products

## CURRENT EMPLOYMENT

TEM CONSULTING, LP

2000-Present

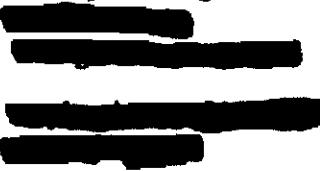
President of the General Partner

## EDUCATION

BS, Physics

University of Wisconsin, Madison, WI.

**H. Stephen Berger**



## **PROFILE**

Product compliance, standards and regulatory expertise with specialization in:

- ◆ Voting equipment testing and certification,
- ◆ Standards development and regulatory management,
- ◆ Development of engineering standards supporting regulatory requirements,
- ◆ Government and Industry Relations,
- ◆ Advanced technology business planning,
- ◆ Product development and design.

25 years of product development and technology planning experience:

- ◆ US Election Assistance Commission, Technical Reviewer.
- ◆ Voting Equipment Examiner, States of Texas and North Carolina.
- ◆ Member of 3 US federal advisory committees.
- ◆ Testifying witness, US Department of Justice.
- ◆ President of the National Association of Radio and Telecommunications Engineers (NARTE).
- ◆ Distinguished Guest Lecturer, Cyber Security Center, Our Lady of the Lake University.
- ◆ Former member of the IEEE Standard Board.
- ◆ Chair of the IEEE EMC Society Standards Development Committee.

## **SELECTED ACCOMPLISHMENTS**

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